

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

GUNARATNAM et al.

Serial No. 10/090,173

Filed: March 6, 2002

For: MASK AND HEADGEAR CONNECTOR

Atty. Ref.: 4398-211

TC/A.U.: 3771

Examiner: Annette Fredricka Dixon

\* \* \* \* \*

September 10, 2008

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Sir:

Appellant hereby **appeals** to the Board of Patent Appeals and Interferences from  
the last decision of the Examiner.

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**(I) REAL PARTY IN INTEREST**

The real party in interest is ResMed Limited, a corporation of the country of Australia, by way of an Assignment recorded at Reel/Frame 012269/0646.

**(II) RELATED APPEALS AND INTERFERENCES**

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

**(III) STATUS OF CLAIMS**

The application was filed including claims 21-40 (claims 1-20 were cancelled without prejudice or disclaimer by Preliminary Amendment). Throughout the prosecution of the application claims 21-32, 36-38 and 40 were cancelled without prejudice or disclaimer, and claims 41-106 were added, with claims 41-61, and 64-70 having been subsequently cancelled without prejudice or disclaimer. Claims 1-32, 36-38, 40-61 and 64-70 have also been cancelled. Claims 33-35, 39, 62, 63 and 71-106 are thus pending and have been rejected. No claims have been substantively allowed.

Claims 33-35, 39, 62, 63 and 71-106 are on appeal.

**(IV) STATUS OF AMENDMENTS**

No amendments have been filed since the date of the Final Rejection.

**(V) SUMMARY OF CLAIMED SUBJECT MATTER**

The following summary is for illustrative and explanatory purposes only. The references to the specification and drawings are not an admission that the claimed inventions are limited to any, or all, of the disclosed embodiments.

33. A respiratory mask assembly comprising:

a headgear structure (100) including at least one strap portion (110) having an end (Fig. 1);

a male connector portion (600; 700) attached to the end of the at least one strap portion (Figs. 6a-6d; Figs. 7a and 7b; page 6, lines 30-31), the male connector portion (600; 700) including a trailing portion (630) that has a pair of spaced side portions (690) and a cross bar (680, 710a, 710b) extending transversely therebetween (Fig. 6a, page 6, line 30), the male connector portion (600; 700) also including a leading portion (620) that has a pair of longitudinally extending side beams (640) spaced slightly inwardly from the side portions (690) (Fig. 6a), the leading portion (620) including a cross piece (650) extending between the side beams (640) and defining a leading edge of the male connector portion (600) (page 6, lines 16-17), the leading portion of the male connector portion also including a cantilevered member (660) extending from an intermediate portion of the cross piece (650) toward the trailing portion (630) of the male connector portion (600) (page 6, lines 17-18), the cantilevered member (660) being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member (660) including a locking element (610)

extending outwardly therefrom, the locking element (610) being positioned on the cantilevered member (660) generally spaced from the cross piece (650), the leading portion (620) of the male connector portion (600; 700) including a ridge structure (670) adjacent the trailing portion (630) and extending generally perpendicularly relative to the side beams (640) (page 6, lines 14-28);

a mask frame (400) (Fig. 5, page 5, line 8); and

a female connector portion (470) secured to the mask frame (400) and being configured to receive the male connector portion (600; 700) therein (page 5, lines 25-27).

34. The respiratory mask assembly of claim 33, wherein the mask frame (400) includes a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit, the mask frame (400) including a pair of inclined side wall portions (420) and a base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (Fig. 5, page 5, lines 8-23).

35. The respiratory mask assembly of claim 34, wherein the mask frame (400) includes a rim (440) at rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (Figs. 4 and 5, page 5, lines 14-16).



39. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame (400) (Figs. 4 and 5), and a headgear (100) (Fig. 1) for securing said mask on a patient, said headgear including at least one attachment strap (110), said mask frame (400) having secured thereto a rigid first connector portion (470) (page 5, lines 25-26), further comprising a second connector portion (600; 700) (page 6, lines 12; page 7, lines 9-11) adapted for releasable mating with said first connector portion (470), said second connector (600; 700) being connected to said attachment strap (110) (page 6, lines 30-31), wherein

said first and second connector portions (470; 600, 700) form a press-release connection between said mask frame and said strap (page 6, lines 25-28);

said first connector portion (470) is a female connector secured to said mask frame (page 5, lines 25-26); and

said second connector portion (600; 700) is a corresponding male connector (page 6, line 12; page 7, lines 9-11), and

said male connector (600; 700) includes a resiliently biased cantilever member (660) depending from a leading end portion (620) of said male connector (600; 700) and being lockable with said female connector (470) (page 6, lines 21-28).

62. A respiratory mask for use with a headgear (100) having first connector portions (600; 700) (Figs. 6a-7b) thereon, each of the first connector portions (600; 700) having one of a resiliently biased locking element (660) and a locking element receiving aperture (page 7, lines 1-4), the respiratory mask comprising:

a mask frame (400) including a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit (page 5, lines 20-21), the mask frame (400) including a pair of inclined side wall portions (420) and a base portion (410) configured in a generally triangular arrangement so as to define an upper vertex portion (page 5, lines 12-13) provided by an intersection of the inclined side wall portions (420) and a pair of laterally spaced lower vertex portions (Fig. 4) provided by intersections of respective inclined side wall portions (420) and the base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (page 5, lines 12-13); an extension member (450) protruding generally radially outwardly relative to the circular gas inlet (460) from the upper vertex (Figs. 4 and 5, page 5, lines 17-18), the extension member (450) being configured to be coupled to a forehead support (page 5, line 18); the extension member (450) providing an arcuate front wall member having a slot formed therein being oriented parallel to the extension member (450) (Figs. 4 and 5);

the mask frame (400) includes an annular rim (440) extending generally outwardly from rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (page 5, lines 12-17, Figs. 4 and 5);

a pair of second connector portions (470) formed in one piece with the mask frame (400) at respective lower vertex portions thereof, the second connector portions (470) being configured to releasably engage with the first connector portions (600; 700) (page

5, lines 25-27); wherein

each of the second connector portions (470) includes a generally oblong slot (page 6, lines 1-3), the generally oblong slot being formed by a base wall member (Figs. 4 and 5) that is disposed between a respective side wall portion (420) and the base portion (410) of the mask frame (400) and being generally parallel to the front wall portion (430), a pair of parallel spaced opposing wall members (Figs. 4 and 5, including front wall 480, page 6, line 8) extending generally perpendicularly from the base wall member, and a structure disposed between the pair of spaced opposing wall members and being spaced from and generally parallel to the base wall member, the structure includes the other of the resiliently biased locking element (660) and locking element receiving aperture (Fig. 6c); the base and opposing wall members and the structure having inward end portions and outward end portions defining a direction that extends generally radially outwardly relative to the circular gas inlet aperture (page 5, lines 27-32); outward end portions of the base wall member and the opposing wall structures defining a generally C-shaped laterally facing surface (500) (Figs. 4 and 5, page 6, lines 9-10) contained within a single plane.

63. A respiratory mask assembly comprising:

a headgear structure (100) including at least one elongate strap (110) (Fig. 1), one end of the elongate strap being doubled over to form a loop (140);

a pair of first connector portions (600; 700) (Figs. 6a-7b) attached to the elongate strap (page 6, lines 30-31), each of the first connector portions (600; 700) including a

trailing portion (630) that has a pair of spaced side portions (690) (Figs. 6a and 6d) and a cross bar (680) extending transversely therebetween to define a strap receiving aperture configured to allow the strap to pass therethrough (page 7, lines 1-3) so that the crossbar (680) is disposed within the loop of the strap, each of the first connector portions (600; 700) also including a leading portion (620) that has a pair of longitudinally extending side beams (640) spaced slightly inwardly from the side portions (690) (Fig. 6d), leading edge portions of the side beams (640) being inwardly tapered toward the leading edges thereof (Fig. 6a), each of the first connector portions (600; 700) having one of a resiliently biased locking element (660) and a locking element receiving aperture (Fig. 6c, page 6, lines 17-18);

a mask frame (400) including a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit (Figs. 4 and 5) (page 5, lines 20-21), the mask frame (400) including a pair of inclined side wall portions (420) and a base portion (410) configured in a generally triangular arrangement so as to define an upper vertex portion (page 5, lines 12-13) provided by an intersection of the inclined side wall portions (420) and a pair of laterally spaced lower vertex portions provided by intersections of respective inclined side wall portions (420) and the base portion (410) (Figs. 4 and 5), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430); an extension member (450) protruding generally radially outwardly relative to the circular gas inlet from the upper vertex (page 5, lines 17-18), the extension member (450) being configured to be coupled to a forehead

support (page 5, line 18); the extension member (450) providing an arcuate front wall member having a slot formed therein being oriented parallel to the extension member (450) (Figs. 4 and 5);

the mask frame (400) includes an annular rim (440) extending generally outwardly from rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (page 5, lines 12-17, Figs. 4 and 5);

a pair of second connector portions (470) formed in one piece with the mask frame (400) at respective lower vertex portions thereof, the second connector portions (470) being configured to releasably engage with the first connector portions (600; 700) (page 5, lines 25-27); wherein

each of the second connector portions includes a generally oblong slot (page 6, lines 1-3), the generally oblong slot being formed by a base wall member (Figs. 4 and 5) that is disposed between a respective side wall portion (420) and the base portion (410) of the mask frame (400) and being generally parallel to the front wall portion (430), a pair of parallel spaced opposing wall members (Figs. 4 and 5, including front wall 480, page 6, line 8) extending generally perpendicularly from the base wall member, and structure disposed between the pair of spaced opposing wall members and being spaced from and generally parallel to the base wall member, the structure including the other of the resiliently biased locking element (660) and the locking element receiving aperture (Fig. 6c); the base and opposing wall members and the structure having inward end portions and outward end portions defining a direction that extends generally radially outwardly

relative to the circular gas inlet aperture (460) (page 5, lines 27-32); outward end portions of the base wall member and the opposing wall structures defining a generally C-shaped laterally facing surface (500) (Figs. 4 and 5, page 6, lines 9-10) contained Within a single plane;

wherein the side beams (640) of each first connector portion (600; 700) are capable of being passed through the oblong slot of the respective second connector portion (470), such that the side beams (640) are disposed substantially between the base wall member and the structure and are disposed substantially between and parallel to the pair of spaced opposing wall members, the crossbar (680) being disposed proximate and generally parallel to the outward end portions of the base wall member (page 6, lines 22-24);

the resiliently biased locking elements (660) being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position (page 6, lines 22-24); and

the locking element receiving apertures (490) being configured to locking engage with the resiliently biased locking elements (610) when in the undeflected position (page 6, lines 21-28).

71. A respiratory mask assembly according to claim 33, wherein each side portion (690) of the trailing portion (630) comprises at least one groove (Fig. 6a, page 6, lines 31-32).

72. A respiratory mask assembly according to claim 33, wherein the locking element comprises two lugs (610) on opposite sides of the cantilevered member (660) (Figs. 6a-7b, page 6, line 19).

73. A respiratory mask assembly according to claim 72, wherein each lug (610) has a wedge profile (page 6, lines 21).

74. A respiratory mask assembly according to claim 33, wherein the ridge structure (670) is formed on the cantilevered member (660) (page 6, line 19).

75. A respiratory mask assembly according to claim 33, further comprising an arcuate ridge (675) (Figs. 6a and 6b) between the ridge structure (670) and the locking element (610) (page 7, line 5) (see November 20, 2007 Amendment to drawings and specification).

76. A respiratory mask assembly according to claim 33, wherein the pair of spaced side portions (690) and the cross bar (680) define an aperture configured to receive the end of the at least one strap portion (page 6, line 30 through page 7, line 4).

77. A respiratory mask assembly according to claim 33, wherein the mask frame (400) comprises an extension (450) configured for attachment of a forehead support (Figs. 4 and 5, page 5, lines 17-18).

78. A respiratory mask assembly according to claim 34, wherein the female connector portion (470) is secured to the front wall portion (430) of the mask frame (400) (page 5, lines 25-26).

79. A respiratory mask assembly according to claim 33, wherein the female connector portion (470) is secured to the mask frame (400) to permit the male connector portion (600; 700) to be connected to and disconnected from the female connector portion (470) in a single-hand operation (page 8, lines 7-9).

80. A respiratory mask assembly according to claim 39, wherein the mask frame (400) includes a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit (Figs. 4 and 5) (page 5, lines 20-23), the mask frame (400) including a pair of inclined side wall portions (420) and a base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (page 5, lines 12-14).

81. A respiratory mask assembly according to claim 80, wherein the mask frame (400) includes a rim (440) at rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (Figs. 4 and 5) (page 5, lines 14-17).



82. A respiratory mask assembly according to claim 39, wherein the cantilever member (660) comprises a lug (610) configured to engage a socket (490) in the female connector (470) (Figs. 6a-7b, page 6, lines 8-10).

83. A respiratory mask assembly according to claim 82, wherein the lug (610) has a wedge profile (page 6, line 21).

84. A respiratory mask assembly according to claim 39, wherein the mask frame (410) comprises an extension (450) configured for attachment of a forehead support (Figs. 4 and 5, page 5, lines 17-18).

85. A respiratory mask assembly according to claim 80, wherein the female connector (470) is secured to the front wall portion (430) of the mask frame (400) (Figs. 4 and 5, page 5, lines 25-26).

86. A respiratory mask assembly according to claim 39, wherein the female connector (470) is secured to the mask frame (400) to permit the male connector (600; 700) to be connected to and disconnected from the female connector portion in a single-hand operation (page 8, lines 7-9).

87. A headgear (100) for a respiratory mask assembly, the headgear comprising:

at least one strap portion (110) having an end;

a male connector portion (600; 700) (Figs. 6a-7b) attached to the end of the at least one strap portion (110), the male connector portion (600; 700) including a trailing portion (630) that has a pair of spaced side portions (690) and a cross bar (680) extending transversely therebetween (Figs. 6a-7b) (page 6, lines 30-32), the male connector portion (600; 700) also including a leading portion (620) that has a pair of longitudinally extending side beams (640) spaced slightly inwardly from the side portions (690), the leading portion (620) including a cross piece (650) extending between the side beams (640) and defining a leading edge of the male connector portion (page 6, lines 16-17), the leading portion (620) of the male connector portion (600; 700) also including a cantilevered member (660) extending from an intermediate portion of the cross piece (650) toward the trailing portion (630) of the male connector portion (600; 700), the cantilevered member (660) being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position (page 6, lines 22-28), the cantilevered member (660) including a locking element (610) extending outwardly therefrom (page 6, lines 19), the locking element (610) being positioned on the cantilevered member (660) generally spaced from the cross piece (650), the leading portion (620) of the male connector portion (600; 700) including a ridge structure (670) adjacent the trailing portion (630) and extending generally perpendicularly relative to the side beams (640) (page 6, line 19).

88. A headgear according to claim 87, wherein each side portion (690) of the trailing portion (630) comprises at least one groove (page 6, lines 31-32).

89. A headgear according to claim 87, wherein the locking element (610) comprises two lugs on opposite sides of the cantilevered member (660) (Figs. 6a-7b, page 6, line 19).

90. A headgear according to claim 89, wherein each lug (610) has a rounded wedge profile (page 6, line 21).

91. A headgear according to claim 87, wherein the ridge structure (670) is formed on the cantilevered member (660) (page 6, line 19).

92. A headgear according to claim 87, further comprising an arcuate ridge (675) between the ridge structure (670) and the locking element (610) (page 7, line 5, see the November 20, 2007 amendments to the specification and drawings).

93. A headgear according to claim 92, wherein a height of the arcuate ridge (675) is less than a height of the ridge portion (670) and more than a height of the locking element (610) (Figs. 6b-6d).

94. A headgear according to claim 87, wherein the pair of spaced side portions (690) and the cross bar (680) define an aperture configured to receive the end of the at least one strap portion (page 7, lines 1-3), the aperture having a first width adjacent the cross bar (680) and a second width adjacent the cantilevered member (660), the first width being greater than the second width (Fig. 6a).

95. A headgear according to claim 87, wherein a distance between a leading side of the cross bar (680) and a trailing edge of the cantilever member (660) is at least 5 mm (page 7, lines 1-3).

96. A headgear according to claim 87, wherein the ridge structure (670) has a width of approximately 14 mm and a length of approximately 5 mm (page 7, lines 16-17).

97. A headgear according to claim 87, further comprising an arcuate projection (615) extending inwardly from the cantilevered member (660) (Figs. 6c and 6d, page 6, lines 19+, see the November 20, 2007 amendments to the specification and drawings).

98. A headgear according to claim 97, wherein the arcuate projection (615) is positioned between the locking element (610) and the ridge structure (670) (Figs. 6c and 6d).

99. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame (400) (Figs. 4 and 5), adjustable headgear (100) (Fig. 1) for securing said mask on a patient, said headgear (100) including at least one attachment strap (110) adapted to extend in a predetermined direction when coupled with the frame (400) (page 7, lines 20-22), said mask frame having secured thereto a substantially rigid first connector (470) (page 5, lines 25-26), further comprising a second connector (600; 700) adapted for releasable mating with said first connector (470), said second connector being connected to said attachment strap of the headgear (page 7, lines 1-3), wherein  
said first and second connectors (470; 600; 700) form a press-release connection (page 8, lines 7-9 and 14-15);

said first connector (470) is a female connector having a receiving slot (page 6, line 1), said female connector (470) being secured to and extending laterally away from said mask frame (400) such that the slot remains generally aligned with the predetermined direction of the strap (page 7, lines 20-22 and page 5, lines 27-31);

said second connector (600; 700) is a corresponding male connector (page 6, line 12); and

said male connector includes a resiliently biased cantilever member (660) depending from a leading end portion (620) of said male connector (600; 700) and being lockable with said female connector (470) upon insertion of said leading end portion (620) into the receiving slot of the female connector (470) (page 6, lines 14-15 and 25-28).

100. A respiratory mask assembly according to claim 99, wherein the female connector (470) is secured to the mask frame (400) to permit the male connector portion (600; 700) to be connected to and disconnected from the female connector portion (470) in a single-hand operation (page 8, line 7).

101. A respiratory mask assembly according to claim 99, wherein the mask frame (400) includes a front wall portion (430) defining a forward end of the mask frame (400), the front wall portion (430) having a circular gas inlet aperture (460) configured to connect to a gas delivery conduit (page 5, lines 20-22), the mask frame including a pair of inclined side wall portions (420) and a base portion (410), each side wall portion (420) and the base portion (410) having a portion thereof connected to the front wall portion (430) (Figs. 4 and 5, page 5, lines 12-16).

102. A respiratory mask assembly according to claim 101, wherein the female connector (470) is secured to the front wall portion (430) of the mask frame (400) (Figs. 4 and 5, page 5, lines 25-26).

103. A respiratory mask assembly according to claim 101, wherein the mask frame (400) includes a rim (440) at rear edges of the inclined side wall portions (420) and the base portion (410), the rim (440) defining a rearward end of the mask frame (400) and being configured to allow a cushion to be attached thereto (page 5, lines 14-17).

104. A respiratory mask assembly according to claim 99, wherein the mask frame (400) comprises an extension (450) configured for attachment of a forehead support (page 5, lines 17-18).

105. A respiratory mask assembly according to claim 99, wherein the cantilever member (660) comprises a lug (610) configured to engage a socket (490) in the female connector (470) (page 6, lines 25-28).

106. A respiratory mask assembly according to claim 105, wherein the lug (610) has a wedge profile (page 6, line 21).

**(VI) GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 39, 62, 63, 78-81, 85 and 86 were rejected under 35 U.S.C. §103(a) over Rudolph (U.S. Patent 6,192,886).

Claims 33-35, 71-76, 82, 83, 87-103, 105 and 106 were rejected under 35 U.S.C. §103(a) over Rudolph in view of Ferrero et al. (U.S. Patent 5,657,493).

Claims 77, 84 and 104 were rejected under 35 U.S.C. §103(a) over Rudolph in view of Ferrero et al. and further in view of Sullivan (U.S. Patent 5,243,971).



**(VII) ARGUMENT**

**A. Claims 39, 62, 63, 78-81, 85 and 86 Are Not Obvious Over Rudolph**

**1. Claim 39 Is Not Obvious**

The rejection of claim 39 fails to present a prima facie case of obviousness because the examiner has failed to correctly determine the scope and content of the prior art, and thus the differences between the invention of claim 39 and the prior art. The examiner has also failed to provide a reason why one of ordinary skill in the art would modify the prior art to arrive at the invention of claim 39, instead relying solely on inapplicable, boilerplate case law in determining the obviousness of the invention of claim 39.

Claim 39 recites, *inter alia*, a respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame and a headgear for securing the mask on a patient.

The April 25, 2008 Office Action (“the Office Action”) states, on page 2, paragraph number 3, that “Rudolph discloses...a respiratory mask (5) having a rigid mask frame (13).” However, as was noted in the previous responses, Rudolph clearly discloses in column 3, lines 42-50, that the nasal mask 5 is preferably constructed of silicone or other like material that is flexible and resilient and includes a cup-like structure 13. As further disclosed in column 3, line 62 through column 4, line 2, an inner sealing flange 32 extends inward from the rim 17 of the nasal cup 13 and is generally an extension of and comprises a thin layer of the flexible and resilient material used to construct the rest of the nasal cup 13. As even further disclosed in column 2, lines 38-39,

it is one of the objects of Rudolph to provide a mask in which the nasal cup is formed from flexible material.

Rudolph clearly does not disclose a rigid mask frame as recited in claim 39.

Claim 39 further recites, *inter alia*, the headgear includes at least one attachment strap, the mask frame having secured thereto a rigid first connector portion, and further comprising a second connector portion adapted for releasable mating with the first connector portion, the second connector being connected to the attachment strap.

The Office Action, on page 2, paragraph number 3, states that Rudolph discloses “said mask frame (13) having rigidly secured thereto a rigid first connector portion (90).”

However, as disclosed in column 6, lines 22-30, of Rudolph, the three strap securement buttons 90 are integrally formed on the outer surface 15 of the nasal cup 13 of the same flexible material as the rest of the mask 5.

Rudolph clearly does not disclose or suggest a rigid first connector portion as recited in claim 39.

Claim 39 further recites, *inter alia*, a second connector portion connected to the attachment strap of the headgear, wherein the first and second connector portions form a press-release connection between said mask frame and said strap, the first connector portion is a female connector secured to said mask frame; and the second connector portion is a corresponding male connector.

The male connector includes a resiliently biased cantilever member depending from a leading end portion of said male connector and being lockable with said female connector.

The Office Action, on page 2, paragraph number 3, states that Rudolph discloses “a second connector portion (10).” The strap fasteners 10 of Rudolph are not male connectors and do not correspond to the second connector portion of claim 39.

Furthermore, although securement buttons 90 of Rudolph are arguable male connector portions, the buttons 90 of Rudolph do not include a resiliently biased cantilever member depending from a leading end portion of the buttons 90. The buttons 90 of Rudolph also do not correspond to any of the features recited in claim 39.

The Office Action, on page 3, lines 2 – 9, “[h]owever, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the first connector to be female and attached to the mask and the second connector to be male and attached to the strap, since it has been held that rearranging parts of an invention involves only routine skill in the art.” The Office Action then cites In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). The Office Action concludes, “[f]urther, one of ordinary skill in the art would not expect the rearrangement of parts to adversely affect the effectiveness of the mask to be secure to the patient for operation.”

As noted in the previous responses, MPEP § 2144.04 VI.C. discusses the case of In re Japikse, which involved claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch. The claims were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device. Moreover, as that section of the MPEP further notes, the mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims is not by itself sufficient to support a finding of obviousness. The

prior art must provide a motivation or reason for the worker in the art, without the benefit of Applicants' specification, to make the necessary changes in the reference device (citing to Ex parte Chicago Rawhide Mfg. Co., 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984)).

It is respectfully submitting that switching the strap securement buttons 90 (male connectors) formed on the nasal cup 13 (the mask frame) to female connectors, and switching the button receiving aperture 93 of the strap fasteners 10 (the female connectors) to male connectors would modify the operation of the nasal mask of Rudolph.

As discussed above, Rudolph discloses that one of the objectives of his invention is to provide a nasal cup formed from flexible material. See column 2, lines 38-39. Rudolph further discloses that the strap securement buttons 90 are integrally formed on the outer surface of the nasal cup 13 and the strap fasteners 10 are secured to a respective button by pressing the flexible button 90 through a respective button receiving aperture 93 in the fastener 10. Therefore, the formation of the strap securement buttons 90 (i.e. male connectors) on the nasal cup 13 is necessary for Rudolph to achieve his objective of a flexible nasal cup. One of ordinary skill in the art would have no reason to change the male connectors (buttons 90) formed on the nasal cup 13 to female connectors, as proposed in the Office Action. Furthermore, changing the male connectors (buttons 90) of Rudolph to female connectors would clearly modify the operation of the mask of Rudolph, which is clearly different from the facts of In re Japikse in which the modification did not modify the operation of the device. For example, making the nasal

cup 13 and/or the buttons 91 of Rudolph rigid, instead of flexible as disclosed, would clearly modify the operation of the mask of Rudolph. Furthermore, such a modification would clearly alter the principle of operation of the mask of Rudolph.

Rather than address the substance of Appellants' arguments that the facts of In re Japikse are not sufficiently similar to the instant application to permit the examiner to rely on the rationale used by the Court, the examiner on page 7, paragraph number 6, "presents prior art Lane (5,555,569) as extrinsic evidence of the teaching of a male connector(120) positioned on the strapping region and a female connector (106) positioned on the mask region for the purpose of retaining the mask region to the strap region. (Figure 7, Column 4)."

As was noted in the previous responses, MPEP § 706.02(j) states:

Where a reference is relied on to support a rejection, whether or not in a minor capacity, that reference should be positively included in the statement of the rejection. See In re Hoch, 428 F.2d 1341, 1342 n.3 166 USPQ 406, 407 n. 3 (CCPA 1970).

It is respectfully submitted that regardless of the application, or non-application, of Lane to the rejection, Lane fails to cure the deficiencies of Rudolph.

It is also respectfully submitted that the examiner has failed to correctly determine the scope and content of Lane. Lane does not disclose a female connector 106 positioned on the mask region for the purpose of retaining the mask region to the strap region, as alleged by the examiner. Lane discloses that the female components 108 of the releasable male-female connectors 106 are each connected to the straps 80, 81 by an O-ring 114 and a web strip 116. The female component 108 is not secured to the mask 28" and thus does not cure the deficiencies of Rudolph with respect to claim 39.

Accordingly, even if Lane were applied or combined with Rudolph, the rejection would still fail to present a *prima facie* case of obviousness.

**2. Claim 62 Is Not Obvious**

Claim 62 recites, *inter alia*, that the mask frame includes an extension member protruding generally radially outwardly relative to the circular gas inlet from the upper vertex, the extension member being configured to be coupled to a forehead support; the extension member providing an arcuate front wall member having a slot formed therein being oriented parallel to the extension member.

The Office Action does not identify any portion of Rudolph that discloses or suggests this feature, as required by 37 C.F.R. § 1.104(c)(2). It is respectfully submitted that the Office Action fails to identify any portion of Rudolph disclosing this feature because Rudolph does not disclose this feature.

Claim 62 further recites, *inter alia*, a pair of second connector portions formed in one piece with the mask frame at respective lower vertex portions thereof, the second connector portions being configured to releasably engage with the first connector portions. Each of the second connector portions includes a generally oblong slot, the generally oblong slot being formed by a base wall member that is disposed between a respective side wall portion and the base portion of the mask frame and being generally parallel to the front wall portion.

The Office Action does not identify any portion of Rudolph that discloses or suggests these features because Rudolph does not.

Claim 62 even further recites a pair of parallel spaced opposing wall members

extending generally perpendicularly from the base wall member, and structure disposed between the pair of spaced opposing wall members and being spaced from and generally parallel to the base wall member, the structure includes the other of the resiliently biased locking element and locking element receiving aperture; the base and opposing wall members and the structure having inward end portions and outward end portions defining a direction that extends generally radially outwardly relative to the circular gas inlet aperture; outward end portions of the base wall member and the opposing wall structures defining a generally C-shaped laterally facing surface contained within a single plane.

Rudolph does not disclose or suggest any of these features. Even assuming it would have been obvious to form female connector portions on the nasal cup 13 and to provide male connector portions to the strap 9 of Rudolph, which Appellants do not concede for the reasons discussed above, such a modification would not result in the features of claim 62 discussed above.

The examiner's reliance on the rationale used by the Court in In re Japikse is insufficient to establish a *prima facie* case of obviousness for the same reasons discussed above with respect to claim 39, as is the examiner's citation of the "extrinsic evidence" of Lane.

### 3. Claim 63 Is Not Obvious

As discussed above with respect to claim 62, claim 63 also recites each of the second connector portions includes a generally oblong slot, the generally oblong slot being formed by a base wall member that is disposed between a respective side wall portion and the base portion of the mask frame and being generally parallel to the front

wall portion, which is neither disclosed nor suggested by Rudolph.

Claim 63 also recites a pair of parallel spaced opposing wall members extending generally perpendicularly from the base wall member, and structure disposed between the pair of spaced opposing wall members and being spaced from and generally parallel to the base wall member, the structure includes the other of the resiliently biased locking element and locking element receiving aperture; the base and opposing wall members and the structure having inward end portions and outward end portions defining a direction that extends generally radially outwardly relative to the circular gas inlet aperture; outward end portions of the base wall member and the opposing wall structures defining a generally C-shaped laterally facing surface contained within a single plane, which as discussed above with respect to claim 62 is neither disclosed nor suggested by Rudolph.

Claim 63 additionally recites, *inter alia*, each of the first connector portions including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween to define a strap receiving aperture configured to allow the strap to pass therethrough so that the crossbar is disposed within the loop of the strap, each of the first connector portions also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, leading edge portions of the side beams being inwardly tapered toward the leading edges thereof, each of the first connector portions having one of a resiliently biased locking element and a locking element receiving aperture. The Office Action does not identify any portion of Rudolph where these features are disclosed or suggested, presumably because Rudolph does not, in fact, disclose these features.



Moreover, claim 63 recites, *inter alia*, the side beams of each first connector portion are capable of being passed through the oblong slot of the respective second connector portion, such that the side beams are disposed substantially between the base wall member and the structure and are disposed substantially between and parallel to the pair of spaced opposing wall members, the crossbar being disposed proximate and generally parallel to the outward end portions of the base wall member; the resiliently biased locking elements being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position; and the locking element receiving apertures being configured to locking engage with the resiliently biased locking elements when in the undeflected position.

These features are neither disclosed nor suggested by Rudolph.

The examiner's reliance on the rationale used by the Court in In re Japikse and the "extrinsic evidence" of Lane are both insufficient to cure these deficiencies of Rudolph.

#### **4. Claims 80, 81, 85 and 86 Are Not Obvious**

Claim 80 recites that the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

Rudolph discloses that the nasal cup 13 is generally formed from a continuous wall 14 and has a bulbous nose shape. See column 3, lines 46-47 and column 4, lines 41-42. Rudolph does not disclose a mask frame having a front wall, a pair of inclined side

wall portions and a base wall portion, with each side wall portion and the base wall portion connected to the front wall, as recited in claim 34.

Claim 81 depends from claim 80 and recites that the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

Rudolph discloses that the rim 17 of the nasal cup 13 includes an inner sealing flange 32 and an outer sealing flange 33 that are thin layers of the flexible and resilient material used to construct the rest of the nasal cup 13. See column 3, line 62 through column 4, line 16. The inner and outer sealing flanges 32, 33, respectively, are configured to seal against the patient's face. The rim 17 of Rudolph thus does not define a rearward end of the nasal cup 13 that is configured to allow a cushion to be attached thereto. Rudolph actually teaches away from the connection of a cushion to the nasal cup 13 by disclosing the formation of the sealing flanges 32, 33 integrally with the rim 17.

Claim 85 depends from claim 80 and recites that the female connector is secured to the front wall portion of the mask frame.

As discussed above, Rudolph discloses male connectors (the securement buttons 90) on the nasal cup 13, not female connectors. As also discussed above, one of ordinary skill in the art would not have modified the mask of Rudolph to include female connectors on the nasal cup 13 as such a modification would clearly alter the principle of operation of the mask of Rudolph, and destroy Rudolph's objective of providing a flexible nasal mask.

Claim 86 recites that the female connector is secured to the mask frame to permit the male connector to be connected to and disconnected from the female connector portion in a single-handed operation.

Rudolph does not disclose or suggest a female connector portion on the nasal cup 13. One of ordinary skill would not have modified the nasal mask of Rudolph to include a female connector portion on the nasal cup 13. Furthermore, even assuming such a modification were made, Rudolph would still fail to disclose or suggest the features recited in claim 86. The strap fasteners 10 are not connectable to, or disconnectable from, the securement buttons 90 in a single-handed operation, as recited in claim 86.

As disclosed in column 6, lines 33-38, the strap fasteners 10 include the button receiving aperture 93 and the strap receiving slot 94. The strap fasteners 10 are secured to a respective button 90 by pressing the flexible button 90 through a respective button receiving aperture 93 in the strap fastener 10. It is respectfully submitted that such a connection, and any subsequent disconnection, would require both hands, regardless of whether the apertures are formed on the strap fasteners 10 or the nasal cup 13. One had would be required to hold the strap fastener 10 and the other hand would be needed to press the button 90 through the aperture 93.

**B. Claims 33-35, 71-76, 78, 79, 82, 83, 87-103, 105 and 106 Are Not Obvious Over Rudolph in View of Ferrero et al.**

**1. Claims 33 and 87 Are Not Obvious**

The Office Action states, incorrectly, on page 4, paragraph number 4, that Rudolph discloses all the recited elements, yet does not expressly disclose the use of a cantilever member with the connector elements. The Office Action then states, again incorrectly,

that “Ferrero teaches the cantilever member (the combination of elements 30 and 36) has a leading end (the portion containing element 44), a trailing end (the portion containing element 56) and a release portion (56), and locking portion (58). (Figures 5-8).” The Office Action then concludes “it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the cantilever member in combination with the male connector on the strap, as taught by Ferrero, for the purpose of retaining the strap and mask on the user.”

Claim 33 recites, *inter alia*, a respiratory mask assembly comprising a headgear structure including at least one strap portion having an end; a male connector portion attached to the end of the at least one strap portion, the male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween, the male connector portion also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, the leading portion including a cross piece extending between the side beams and defining a leading edge of the male connector portion, the leading portion of the male connector portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece, the leading portion of the male connector portion including a ridge structure adjacent the

trailing portion and extending generally perpendicularly relative to the side beams; a mask frame; and a female connector portion secured to the mask frame and being configured to receive the male connector portion therein.

Rudolph discloses a nasal mask having a flexible cap 8 having a plurality of adjustable straps 9 connected to a nasal mask assembly 1 using a plurality of strap fasteners 10. The strap fasteners 10 include a button receiving aperture 93 and a strap receiving slot 94. The strap fasteners 10 are secured to a respective button 90 by pressing the flexible button 90 through a respective button receiving aperture 93 in the fastener.

Rudolph does not disclose or suggest a male connector portion as recited in claim 33. Rudolph does not disclose or suggest 1) a male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween. Rudolph also does not disclose or suggest 2) a male connector portion including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, the leading portion including a cross piece extending between the side beams and defining a leading edge of the male connector portion. Rudolph does not disclose or suggest 3) a male connector portion having a leading portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece. Rudolph

further fails to disclose or suggest 4) a leading portion of a male connector portion including a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams.

Ferrero et al. do not cure any of the deficiencies of Rudolph discussed above with respect to claim 33. For example, the Office Action identifies the leading end of the male coupling portion 30 of Ferrero et al. as the portion containing the guide arm 44. However, this so-called leading end of Ferrero et al. does not include a crosspiece from which a cantilevered member extends.

Furthermore, the strap retaining portion 36 of the first coupling portion 30 of Ferrero et al. does not correspond to the cantilevered member of claim 33. There is no disclosure or suggestion by Ferrero et al. that the strap retaining portion 36 is movable between deflected and undeflected positions and is resiliently biased toward the undeflected position. As also discussed above, the strap retaining portion 36 does not extend from an intermediate portion of a crosspiece extending between side beams and does not correspond to the cantilever member of claim 33.

The Office Action on page 4, paragraph number 4, also states that the latch member or keeper tooth 58 of Ferrero et al. correspond to the locking element of claim 33. Appellants respectfully disagree. The latch member or keeper tooth 58 of Ferrero et al. is not positioned on a cantilevered member generally spaced from a crosspiece that extends between side beams. Accordingly, the latch member or keeper tooth 58 does not correspond to the locking element of claim 33.

As the combination of Rudolph and Ferrero et al. fails to include all of the features

recited in claim 33, the combination fails to present a *prima facie* case of obviousness.

Claim 87 recites a headgear for a respiratory mask assembly comprising a male connector portion having the features discussed above with respect to claim 33. As the combination of Rudolph and Ferrero et al. fails to include all of the features of the male connector portion of claim 87, the combination fails to present a *prima facie* case of obviousness.

## **2. Claim 99 Is Not Obvious**

Claim 99 recites a respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, the mask frame having secured thereto a substantially rigid first connector. An adjustable headgear for securing the mask on a patient includes at least one attachment strap adapted to extend in a predetermined direction when coupled with the frame. A second connector is adapted for releasable mating with the first connector. The second connector is connected to the attachment strap of the headgear.

The Office Action alleges on page 4, paragraph number 4, that Rudolph discloses all the recited elements of claim 99 except the use of a cantilever member with the connector elements. Rudolph, however, does not disclose or suggest 1) a rigid mask frame or 2) a substantially rigid first connector secured to the mask frame. The nasal cup 13 of Rudolph is formed of flexible material, and the securement buttons 90 are integrally formed with the nasal cup 13 of the same flexible material.

Although Ferrero et al. disclose a first (male) coupling portion 30 attached to a strap 40 and a second (female) coupling portion 32 fixed and integrally formed into the

side portion 16, 18 of the mask frame 12, one of ordinary skill in the art would not have modified the mask of Rudolph to include a female connector portion(s) on the nasal cup 13 as Rudolph clearly disclose that the flexible securement buttons 90 (i.e. male connector portions) are provided on the flexible nasal cup 13 so that the buttons 90 maybe pressed through the button receiving aperture 93 in the fastener 10 (i.e. female connector portion) connected to the strap 9. This configuration is provided by Rudolph to meet his objective of providing a flexible nasal mask that is unobtrusive while providing an air-tight seal. Providing a rigid nasal cup and/or a rigid first (female) connector to the mask of Rudolph, as shown by Ferrero et al., would clearly alter the principle of operation of the mask of Rudolph. One of ordinary skill in the art would not make such a modification or combination.

Claim 99 also recites, *inter alia*, the male connector includes a resiliently biased cantilever member depending from a leading end portion of said male connector and being lockable with said female connector upon insertion of the leading end portion into the receiving slot of the female connector.

Ferrero et al. does not disclose or suggest a cantilever member as recited in claim 99. At best, Ferrero et al. discloses latch arms 42 that have an inherent biasing force (column 3, lines 38-39), but the latch arms 42 are connected to the middle of the first coupling portion 30 and do not depend from a leading end portion. Even assuming it would have been obvious to combine Rudolph and Ferrero et al., which Appellants do not concede, the combination would not include all the features of claim 99.



**3. Claims 71-76, 78, 79, 82, 83, 88-98, 100-103, 105 and 106 Are Not Obvious**

Claims 71 and 88 each recite that each side portion of the trailing portion of the male connector portion comprises at least one groove. Although Ferrero et al. disclose in column 4, lines 1-3, that the grasping handle or tab 56 of the first coupling portion 30 may be provided with a plurality of grooves, as the first coupling portion 30 of Ferrero et al. fails to include, at least, 1) a cross bar extending transversely between the pair of spaced side portions, 2) a leading portion having a pair of longitudinally extending side beams spaced slightly inward from the side portions, 3) a leading portion including a cross piece extending between the side beams and 4) a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion and including 5) a locking element extending outwardly from the cantilevered member and being positioned on the cantilevered member generally spaced from the cross piece, and the leading portion including 6) a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams as recited in base claims 33 and 87, the first coupling portion 30 of Ferrero et al. does not correspond to the male connector portion of claims 71 and 88 and the combination of Rudolph and Ferrero et al. fails to include all of the claimed features.

With respect to claims 72, 82, 89 and 105, the Office Action on page 5, line 6, identifies the retaining shoulders 49 of Ferrero et al. as allegedly corresponding to the claimed lugs. However, the shoulders 49 of Ferrero et al. are provided on the respective latch arms 42, which do not correspond to the cantilevered member of claim 72, 82, 89 and 105 as they do not extend from an intermediate portion of a cross piece extending

between side beams as recited in their base claims 33 and 87, nor do they depend from a leading end portion as recited in claim 82's base claim 39 and claim 105's base claim 99. Therefore, even assuming it would have been obvious to combine Rudolph and Ferrero et al., which Appellants do not concede, such a combination would not include all of the claimed features.

As the retaining shoulders 49 of Ferrero et al. do not correspond to the claimed lugs, regardless of whether the retaining shoulders have a wedge profile or not, the combination of Rudolph and Ferrero et al. fails to present a *prima facie* case of obviousness against claims 73, 83, 90, and 106.

Ferrero et al. do not disclose or suggest a cantilevered member as claimed, and clearly do not disclose or suggest a ridge structure formed on a cantilevered member as recited in claims 74 and 91, nor an arcuate ridge between the ridge structure and the locking element as recited in claims 75 and 92.

Claim 76 recites that the pair of spaced side portions and the cross bar define an aperture configured to receive the end of the at least one strap portion.

Neither Rudolph nor Ferrero et al. disclose spaced side portions and a cross bar as recited in base claims 33 and 87, and dependent claims 76 and 94. The end 38 of the mask strap 40 of Ferrero et al. is passed between the pivot post 52 and the keeper tooth 58. See column 5, lines 9-11. The first coupling portion 32 does not include an aperture as recited in claim 76, nor an aperture having first and second widths as recited in claim 94. The combination thus fails to include all the claimed features.

Claim 78 depends from claim 34, which was rejected under 35 U.S.C. § 103(a)

over Rudolph in view of Ferrero et al. However, it is respectfully submitted that regardless of the grounds of rejection, the features recited in claim 78 are not disclosed by either Rudolph or Ferrero et al, either alone or in combination.

Claim 34, and claim 101, each recite that the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

Rudolph discloses that the nasal cup 13 is generally formed from a continuous wall 14 and has a bulbous nose shape. See column 3, lines 46-47 and column 4, lines 41-42. Rudolph does not disclose a mask frame having a front wall, a pair of inclined side wall portions and a base wall portion, with each side wall portion and the base wall portion connected to the front wall, as recited in claim 34 (and thus claim 78) and claim 101.

Claims 78 and 102 each further recite that the female connector portion is secured to the front wall portion of the mask frame.

Ferrero et al. fail to cure these deficiencies of Rudolph with respect to claim 78. The frame 12 of Ferrero et al. includes side portions 16, 18 including the first coupling portions 30, but does not disclose that the frame 12 include a front wall portion to which is secured a female connector portion. The combination of Rudolph and Ferrero et al. thus fails to include all the features of claims 78 and 102.

Claim 79 depends from claim 33, which was also rejected under 35 U.S.C. §

103(a) over Rudolph et al. in view of Ferrero et al. Like claim 78 discussed above, it is respectfully submitted that regardless of the grounds of rejection, the features recited in claim 79 are not disclosed by either Rudolph or Ferrero et al, either alone or in combination.

Claims 79 and 100 each recite that the female connector portion is secured to the mask frame to permit the male connector portion to be connected to and disconnected from the female connector portion in a single-handed operation.

Rudolph does not disclose a female connector portion on a mask frame. As discussed above, the strap securement buttons 90 on the nasal cup 13 are male connector portions. It is also respectfully submitted that the strap fasteners 10 are not connectable to, or disconnectable from, the securement buttons 90 in a single-handed operation, as recited in claim 79.

As disclosed in column 6, lines 33-38, the strap fasteners 10 include the button receiving aperture 93 and the strap receiving slot 94. The strap fasteners 10 are secured to a respective button 90 by pressing the flexible button 90 through a respective button receiving aperture 93 in the strap fastener 10. It is respectfully submitted that such a connection, and any subsequent disconnection, would require both hands. One hand would be required to hold the strap fastener 10 and the other hand would be needed to press the button 90 through the aperture 93.

One of ordinary skill in the art would not have combined Rudolph with Ferrero et al., or modified the nasal mask of Rudolph et al. in view of Ferrero et al. to include female connector portions on the flexible nasal cup 13. Thus, the combination fails to

present a *prima facie* case of obviousness against claims 79 and 100.

Claim 93 depends from claim 92 and is allowable for the same reasons as discussed above. Moreover, as Ferrero et al. do not disclose or suggest either an arcuate ridge or a ridge portion, Ferrero et al. can not disclose or suggest anything regarding their height relative to each other, or to a locking element.

Claims 95 and 96 are allowable for the same reasons discussed above with respect to claim 87. Furthermore, the examiner's reliance on the rationale used by the Court in In re Rose, 105 USPQ 237 (CCPA 1955), is insufficient to establish a *prima facie* case of obviousness as the facts of that case are not sufficiently similar to the instant application to permit the examiner to rely solely on the Court's rationale in determining obviousness.

The Office Action lumps claims 97 and 98 in with the rejection of claims 75, 92 and 93, in contravention of MPEP § 707.07(d). It is respectfully noted, however, that claims 97 and 98 recite an arcuate projection extending inwardly from the cantilevered member, which is neither disclosed nor suggested by Rudolph or Ferrero et al., alone or in combination.

Claim 103 depends from claim 101 and recites that the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

Rudolph discloses that the rim 17 of the nasal cup 13 includes an inner sealing flange 32 and an outer sealing flange 33 that are thin layers of the flexible and resilient material used to construct the rest of the nasal cup 13. See column 3, line 62 through

column 4, line 16. The inner and outer sealing flanges 32, 33, respectively, are configured to seal against the patient's face. The rim 17 of Rudolph thus does not define a rearward end of the nasal cup 13 that is configured to allow a cushion to be attached thereto. Rudolph thus teaches away from the connection of a cushion to the nasal cup 13 by disclosing the formation of the sealing flanges 32, 33 integrally with the rim 17.

**C. Claims 77, 84 and 104 Are Not Obvious Over Rudolph in View of Ferrero et al. and Sullivan**

Sullivan et al. fail to cure the deficiencies of Rudolph and the combination of Rudolph and Ferrero et al. discussed above with respect to claims 33, 39 and 99. Therefore, even assuming it would have been obvious to combine the references, which Appellants do not concede, the combination would not present a *prima facie* case of obviousness.

**CONCLUSION**

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

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**(VIII) CLAIMS APPENDIX**

33. A respiratory mask assembly comprising:

a headgear structure including at least one strap portion having an end;  
a male connector portion attached to the end of the at least one strap portion, the male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween, the male connector portion also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, the leading portion including a cross piece extending between the side beams and defining a leading edge of the male connector portion, the leading portion of the male connector portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece, the leading portion of the male connector portion including a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams;

a mask frame; and

a female connector portion secured to the mask frame and being configured to receive the male connector portion therein.



34. The respiratory mask assembly of claim 33, wherein the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

35. The respiratory mask assembly of claim 34, wherein the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

39. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, and a headgear for securing said mask on a patient, said headgear including at least one attachment strap, said mask frame having secured thereto a rigid first connector portion, further comprising a second connector portion adapted for releasable mating with said first connector portion, said second connector being connected to said attachment strap, wherein

said first and second connector portions form a press-release connection between said mask frame and said strap;

said first connector portion is a female connector secured to said mask frame; and  
said second connector portion is a corresponding male connector, and  
said male connector includes a resiliently biased cantilever member depending

from a leading end portion of said male connector and being lockable with said female connector.

62. A respiratory mask for use with a headgear having first connector portions thereon, each of the first connector portions having one of a resiliently biased locking element and a locking element receiving aperture, the respiratory mask comprising:

a mask frame including a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion configured in a generally triangular arrangement so as to define an upper vertex portion provided by an intersection of the inclined side wall portions and a pair of laterally spaced lower vertex portions provided by intersections of respective inclined side wall portions and the base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion; an extension member protruding generally radially outwardly relative to the circular gas inlet from the upper vertex, the extension member being configured to be coupled to a forehead support; the extension member providing an arcuate front wall member having a slot formed therein being oriented parallel to the extension member;

the mask frame includes an annular rim extending generally outwardly from rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto;

a pair of second connector portions formed in one piece with the mask frame at

respective lower vertex portions thereof, the second connector portions being configured to releasably engage with the first connector portions; wherein

each of the second connector portions includes a generally oblong slot, the generally oblong slot being formed by a base wall member that is disposed between a respective side wall portion and the base portion of the mask frame and being generally parallel to the front wall portion, a pair of parallel spaced opposing wall members extending generally perpendicularly from the base wall member, and structure disposed between the pair of spaced opposing wall members and being spaced from and generally parallel to the base wall member, the structure includes the other of the resiliently biased locking element and locking element receiving aperture; the base and opposing wall members and the structure having inward end portions and outward end portions defining a direction that extends generally radially outwardly relative to the circular gas inlet aperture; outward end portions of the base wall member and the opposing wall structures defining a generally C-shaped laterally facing surface contained within a single plane.

63. A respiratory mask assembly comprising:

a headgear structure including at least one elongate strap, one end of the elongate strap being doubled over to form a loop;

a pair of first connector portions attached to the elongate strap, each of the first connector portions including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween to define a strap receiving aperture configured to allow the strap to pass therethrough so that the crossbar is disposed within

the loop of the strap, each of the first connector portions also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, leading edge portions of the side beams being inwardly tapered toward the leading edges thereof, each of the first connector portions having one of a resiliently biased locking element and a locking element receiving aperture;

a mask frame including a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion configured in a generally triangular arrangement so as to define an upper vertex portion provided by an intersection of the inclined side wall portions and a pair of laterally spaced lower vertex portions provided by intersections of respective inclined side wall portions and the base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion; an extension member protruding generally radially outwardly relative to the circular gas inlet from the upper vertex, the extension member being configured to be coupled to a forehead support; the extension member providing an arcuate front wall member having a slot formed therein being oriented parallel to the extension member;

the mask frame includes an annular rim extending generally outwardly from rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto;

a pair of second connector portions formed in one piece with the mask frame at respective lower vertex portions thereof, the second connector portions being configured

to releasably engage with the first connector portions; wherein

each of the second connector portions includes a generally oblong slot, the generally oblong slot being formed by a base wall member that is disposed between a respective side wall portion and the base portion of the mask frame and being generally parallel to the front wall portion, a pair of parallel spaced opposing wall members extending generally perpendicularly from the base wall member, and structure disposed between the pair of spaced opposing wall members and being spaced from and generally parallel to the base wall member, the structure including the other of the resiliently biased locking element and the locking element receiving aperture; the base and opposing wall members and the structure having inward end portions and outward end portions defining a direction that extends generally radially outwardly relative to the circular gas inlet aperture; outward end portions of the base wall member and the opposing wall structures defining a generally C-shaped laterally facing surface contained Within a single plane;

wherein the side beams of each first connector portion are capable of being passed through the oblong slot of the respective second connector portion, such that the side beams are disposed substantially between the base wall member and the structure and are disposed substantially between and parallel to the pair of spaced opposing wall members, the crossbar being disposed proximate and generally parallel to the outward end portions of the base wall member;

the resiliently biased locking elements being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position; and

the locking element receiving apertures being configured to locking engage with

the resiliently biased locking elements when in the undeflected position.

71. A respiratory mask assembly according to claim 33, wherein each side portion of the trailing portion comprises at least one groove.

72. A respiratory mask assembly according to claim 33, wherein the locking element comprises two lugs on opposite sides of the cantilevered member.

73. A respiratory mask assembly according to claim 72, wherein each lug has a wedge profile.

74. A respiratory mask assembly according to claim 33, wherein the ridge structure is formed on the cantilevered member.

75. A respiratory mask assembly according to claim 33, further comprising an arcuate ridge between the ridge structure and the locking element.

76. A respiratory mask assembly according to claim 33, wherein the pair of spaced side portions and the cross bar define an aperture configured to receive the end of the at least one strap portion.

77. A respiratory mask assembly according to claim 33, wherein the mask frame

comprises an extension configured for attachment of a forehead support.

78. A respiratory mask assembly according to claim 34, wherein the female connector portion is secured to the front wall portion of the mask frame.

79. A respiratory mask assembly according to claim 33, wherein the female connector portion is secured to the mask frame to permit the male connector portion to be connected to and disconnected from the female connector portion in a single-hand operation.

80. A respiratory mask assembly according to claim 39, wherein the mask frame includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

81. A respiratory mask assembly according to claim 80, wherein the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

82. A respiratory mask assembly according to claim 39, wherein the cantilever

member comprises a lug configured to engage a socket in the female connector.

83. A respiratory mask assembly according to claim 82, wherein the lug has a wedge profile.

84. A respiratory mask assembly according to claim 39, wherein the mask frame comprises an extension configured for attachment of a forehead support.

85. A respiratory mask assembly according to claim 80, wherein the female connector is secured to the front wall portion of the mask frame.

86. A respiratory mask assembly according to claim 39, wherein the female connector is secured to the mask frame to permit the male connector to be connected to and disconnected from the female connector portion in a single-hand operation.

87. A headgear for a respiratory mask assembly, the headgear comprising:  
at least one strap portion having an end;

a male connector portion attached to the end of the at least one strap portion, the male connector portion including a trailing portion that has a pair of spaced side portions and a cross bar extending transversely therebetween, the male connector portion also including a leading portion that has a pair of longitudinally extending side beams spaced slightly inwardly from the side portions, the leading portion including a cross piece



extending between the side beams and defining a leading edge of the male connector portion, the leading portion of the male connector portion also including a cantilevered member extending from an intermediate portion of the cross piece toward the trailing portion of the male connector portion, the cantilevered member being movable between deflected and undeflected positions and being resiliently biased toward the undeflected position, the cantilevered member including a locking element extending outwardly therefrom, the locking element being positioned on the cantilevered member generally spaced from the cross piece, the leading portion of the male connector portion including a ridge structure adjacent the trailing portion and extending generally perpendicularly relative to the side beams.

88. A headgear according to claim 87, wherein each side portion of the trailing portion comprises at least one groove.

89. A headgear according to claim 87, wherein the locking element comprises two lugs on opposite sides of the cantilevered member.

90. A headgear according to claim 89, wherein each lug has a rounded wedge profile.

91. A headgear according to claim 87, wherein the ridge structure is formed on the cantilevered member.

92. A headgear according to claim 87, further comprising an arcuate ridge between the ridge structure and the locking element.

93. A headgear according to claim 92, wherein a height of the arcuate ridge is less than a height of the ridge portion and more than a height of the locking element.

94. A headgear according to claim 87, wherein the pair of spaced side portions and the cross bar define an aperture configured to receive the end of the at least one strap portion, the aperture having a first width adjacent the cross bar and a second width adjacent the cantilevered member, the first width being greater than the second width..

95. A headgear according to claim 87, wherein a distance between a leading side of the cross bar and a trailing edge of the cantilever member is at least 5 mm.

96. A headgear according to claim 87, wherein the ridge structure has a width of approximately 14 mm and a length of approximately 5 mm.

97. A headgear according to claim 87, further comprising an arcuate projection extending inwardly from the cantilevered member.

98. A headgear according to claim 97, wherein the arcuate projection is positioned between the locking element and the ridge structure.

99. A respiratory mask and headgear combination comprising a respiratory mask having a rigid mask frame, adjustable headgear for securing said mask on a patient, said headgear including at least one attachment strap adapted to extend in a predetermined direction when coupled with the frame, said mask frame having secured thereto a substantially rigid first connector, further comprising a second connector adapted for releasable mating with said first connector, said second connector being connected to said attachment strap of the headgear, wherein

said first and second connectors form a press-release connection;

said first connector is a female connector having a receiving slot, said female connector being secured to and extending laterally away from said mask frame such that the slot remains generally aligned with the predetermined direction of the strap;

said second connector is a corresponding male connector; and

said male connector includes a resiliently biased cantilever member depending from a leading end portion of said male connector and being lockable with said female connector upon insertion of said leading end portion into the receiving slot of the female connector.

100. A respiratory mask assembly according to claim 99, wherein the female connector is secured to the mask frame to permit the male connector portion to be connected to and disconnected from the female connector portion in a single-hand operation.

101. A respiratory mask assembly according to claim 99, wherein the mask frame

includes a front wall portion defining a forward end of the mask frame, the front wall portion having a circular gas inlet aperture configured to connect to a gas delivery conduit, the mask frame including a pair of inclined side wall portions and a base portion, each side wall portion and the base portion having a portion thereof connected to the front wall portion.

102. A respiratory mask assembly according to claim 101, wherein the female connector is secured to the front wall portion of the mask frame.

103. A respiratory mask assembly according to claim 101, wherein the mask frame includes a rim at rear edges of the inclined side wall portions and the base portion, the rim defining a rearward end of the mask frame and being configured to allow a cushion to be attached thereto.

104. A respiratory mask assembly according to claim 99, wherein the mask frame comprises an extension configured for attachment of a forehead support.

105. A respiratory mask assembly according to claim 99, wherein the cantilever member comprises a lug configured to engage a socket in the female connector.

106. A respiratory mask assembly according to claim 105, wherein the lug has a wedge profile.

**(IX) EVIDENCE APPENDIX**

None.

**(X) RELATED PROCEEDINGS APPENDIX**

None.